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RIP(Routing Information Protocol,路由信息协议)是一种内部网关协议(IGP),是一种 动态路由选择协议,用于自治系统(AS)内的路由信息的传递。RIP 协议基于距离矢量算 法(Distance Vector Algorithms),使用"跳数"(即 metric)来衡量到达目标地址的路由距离。 这种协议的路由器只关心自己周围的世界,只与自己相邻的路由器交换信息,范围限制在 15 跳(15 度)之内,再远它就不关心了。

RIP 应用于 OSI 网络七层模型的应用层。各厂家定义的管理距离(AD,即优先级)如下: 华为定义的优先级是 100,思科定义的优先级是 120。

RIP 协议采用距离向量算法,在实际使用中已经较少适用。在默认情况下,RIP 使用一种非常简单的度量制度:距离就是通往目的站点所需经过的链路数,取值为 0~16,数值 16 表示路径无限长。RIP 进程使用 UDP 的 520 端口来发送和接收 RIP 分组。

RIP 分组每隔 30s 以广播的形式发送一次,为了防止出现"广播风暴",其后续的分组将做随 机延时后发送。在 RIP 中,如果一个路由在 180s 内未被刷新,则相应的距离就被设定成无 穷大,并从路由表中删除该表项。RIP 分组分为两种:请求分组和响应分组。

#### 接下来将为您演示使用 BigTao-V 网络测试仪进行 RIP 协议测试







#### 测试目的

- ·验证 DUT 基本的 RIP 功能
- ·验证 RIP 的 MD5 认证功能
- ·验证 RIP 路由的流量转发功能

#### 测试说明

- ·测试仪 P1 模拟 RIP, 和 DUT 的 G1/0/1 发送 RIP
- ·两个 RIP 接口之间使用 MD5 认证
- ·测试仪的 P1 向 DUT 发送 10 条类的 Routes
- ·测试仪端口2向10条 Routes 发送流量,验证是否能够正常转发

#### 测试步骤

- · 按图连接好拓扑
- · 配置好测试仪和 DUT 的接口 IP 地址
- · 在测试仪 P1 和 DUT 的 G1/0/1 上都配置 RIP
- ·RIP 启用 MD5 认证
- ·P1 端口向 DUT 发送 10 条 Routes(50.1.1.0~50.1.10.0/24)
- · 配置 P2 向 10 条 Routes 发送 10%的流量



- · 在测试仪 P1 上启动 RIP
- · 在 DUT 上查看是否学习到测试仪发送 10 条的 Routes
- ·从测试仪 P2 端口向 Routes 各发送 10%的流量

#### 预期结果

- ·DUT 能够学习到全部的 10 条 Routes
- ·测试仪 P1 端口能够收到 P2 发送的流量,没有丢包

#### 2.1 占用 Ports

#### 步骤 1-1: 添加机框



#### 机框 IP 地址

- · 在机框显示屏上查看
- ·默认为 192.168.0.180



#### 步骤 1-2: 占用 Ports

X Select Chassis

🕝 Add Chassis 🛛 😹 Delete Chassis

onnection Name	Part Number		
70.1.1.200     Card 2	BigTao220 V6008C 8xGE Copper	3.0.4.117981	Connected
Port 1			To be Reserved
Port 2			To be Reserved
Port 3			Available
Port 4			Available
Port 5			Available
Port 6			Available
Port 7			Available
Port 8			Available

File	Но	me	View	То	ol	Configurati	ion		_
Add Ports •	Delete Ports Configura	Add Interface	Bring All Online *	Take Offi	All Con ine • Po	nfig Apply rt •	Start All	Stop All	
st Co	nfiguratio	on			ommon	Media			
illi illi	Overview	N			Name	Online	Port	Locati	Link Stat
	Ports	settings			Port_1		//70	1.1.20	Up
-	Port	1 //70.1.1.	200/2/1		Port_2		//70	1.1.20	Up
-	より	nterfaces							
	XX L	23Protocol	S						
	E L	47Protocol	s						
	‡‡ s	treams							
_	10	aptures	-						
	Port_	_2 //70.1.1.1	200/2/2						
	品	nterfaces							
	X L	23Protocol	s						
	€R L	47Protocol	S						
	<b>*</b> # S	treams							
	10	aptures							

RIP 协议测试

在选中的端口上做测试

2.2 配置 IP 地址

	• 🕑 • 💽 •	🕫 📀 🛞			Tool	
File	Home	View	Tool	Con	figuration	
Add nterface •	Delete Interface	Start ARP	On All Inter	faces		
Add Add	Multiple Inter None IP Interf	faces A ace	ction			
Add	IPv4 Interface		Int	erfaces		
Add	IPv6 Interface	-	r	ne Inter	face Name	Enable In
₩	Port_1 //70, Port_1 //70, Interface L23Prote L47Prote Streams	1.1.200/2/1 s ocols ocols				
-	Captures	5				
	Port_2 ///0.	1.1.200/2/2				



					R	IP 协议测证
Ҟ I 🗅 🗁 🔙 • 🕞 • 🥥 I 🔻		Тс	loc			
File Home View	Tool	Config	juration			_
Add Delete Interface Interface	On All Interfa	aces				
Configuration A	ction					
Test Configuration						
overview	Inte	erfaces				
🔅 Overall Settings	P	ort Name	Interface Name	Enable Interface Count	Address Count	E
R Interfaces	► P	Port_1	Interface_1		1	
🖃 🧱 Ports						
Port_1 //70.1.1.200/2/1						
📇 Interfaces						
L23Protocols						
€ L47Protocols						
<b>\$</b> Streams						

还可以通过 wizard 方式创建 Interface

#### 步骤 2-2: 修改 RIP Interface

修改接口 IP 地址信息 Interface 名称 网关是 DUT 的 IP IPv4 地址是本端的 IP

1	nterfaces		
	Port Name	Interface Name	Enable Interface Count
F	Port_1	RIP_Interface	

IPv4 Address	IPv4 Prefix Length	IPv4 Gateway Address	
10.1.1.2	24	10.1.1.1	

#### 学习 ARP (选中接口, 右键)





RIP 协议测试

查看是否学习到网关的 MAC 地址

IPv4 Gateway Address Modifier	IPv4 Resolved MAC Addres	s List
Step = 0.0.0.0	00:0E:84:B0:84:41	

#### 步骤 2-3: 添加 Network Interface



手工添加





还可以通过 wizard 方式创建 Interface

#### 步骤 2-2: 修改 RIP Interface

修改接口 IP 地址信息

- · Interface 名称
- · 网关是 DUT 的 IP

·IPv4 地址是本端的 IP

1	nterfaces		
	Port Name	Interface Name	Enable Interface Count
F	Port_1	RIP_Interface	

IPv4 Address	IPv4 Prefix Length	IPv4 Gateway Address
10.1.1.2	24	10.1.1.1

学习 ARP (选中接口, 右键)



IPv4 Address	IPv4 Prefix Le	ength	IPv4 Gateway Address	
10.1.1.2	24		10.1.1.1	1.6
	<u>b</u>	Сор	y	
		Сор	y Cell Value	
	ж	Cut		
	×	Dele	ete	
	5	Dup	licate	
	6	Past	e	
	>	Star	t ARP	
	>	Star	t All ARP	
		Ping	I	

#### 查看是否学习到网关的 MAC 地址

IPv4 Gateway Address Modifier	IPv4 Resolved MAC Address List
Step = 0.0.0.0	00:0E:84:B0:84:41

#### 步骤 2-3: 添加 Network Interface



手工添加





还可以通过 wizard 方式创建 Interface

#### 步骤 2-4: 修改 Network Interface

修改接口 IP 地址信息

- · 网关是 DUT 的 IP
- ·IPv4 地址是本端的 IP

Ir	nterfaces		
	Port Name	Interface Name	En
•	Port_2	Network_Interface	

IPv4 Address	IPv4 Prefix Length	IPv4 Gateway Address	IP
20.1.1.2	24	20.1.1.1	St

#### 学习 ARP (选中接口, 右键)





查看是否学习到网关的 MAC 地址

	IPv4 Gateway Address Modifier	IPv4 Resolved MAC Address List
1	Step = 0.0.0.0	00:0E:84:B0:84:42

#### 2.3 配置 RIP

步骤 3-1: 手工创建 RIP	
Apply Start Stop Detects Action	Resume RIP View RIP Route
Test Configuration  Control	V         DHCPr/s/PD         DHCPr/s/PD         Server         IGMP         IGMPQue/er         MLD         PPPoE         802.1ag         802.3ah         BFD         BGP         IS-IS         OSPFr/2         OSPFr/2         DIFN         RIP           IPV version         Update Type         DUT IPv4 Address         Authentication         Password         MDS Key ID         Update Interval Leo         Update Interval Leo         Update Interval Leo         IPv2 Multicast         224.0.0.9         ff02-9         None         v         30         0         5         5
X I □     Image: Second	Tool Configuration Edit RIP Edit RIP Configuration Configu
Test Configuration  Coverview  Coverall Settings  Coverall Settings  Ports  Ports  Port_1 //70.1.1.200/2/1  Interfaces  L23Protocols  L47Protocols	L23Protocols     DHCPv4     DHCF       Port Name     Name     Protocol       Port_1     RipProtoc     Vot Start

#### 步骤 3-2: 修改 RIP 配置

版本选择为 RIPv2

ls	DHCPv4	D	HCPv4 Server	DHCPv	5/PD		DHC
ne	Name		Protocol State	RIP Ver	sion	υ	pdate <sup>-</sup>
	RipProtocol	Co	Closed	RIPv2	N	ulticas	
				RIPv1			
				RIPv2			
				RIPng	(		
			L	KIPNG			



配置认证

5	Authentication	Password	MD5 Key ID	Update Inter
	MD5	xinertel	1	30

#### 其它参数

Update Interval (sec)	Update Jitter	Max Route Per Update	Enable Split Horizon	Enable View Routes	Validate Interface IP Address
30	0	25			

#### 步骤 3-3: 关联 配置和接口

关联配置和接口

- · 切换到 L23Protocols
- ·选择 RIP\_Interface





2.4 发	布 Route									
步骤4	-1: 手工添加	Routes								
添加 File	Routes	) ⊘   <del>▼</del> View	Tool	Cor	Tool nfiguration	verti	se RIP 🕞 Resu	ime RIP		Re
Apply	Start Stop Del All All Action	ete Add RIP	Edit RIP	Start RIP	Stop RIP Su RIP	thdra spen	aw RIP <b>F</b> View	/ RIP Route		
lest Co	infiguration			-	1		1		[	
	Overview		L23	Protocols	DHCPv4	Dł	HCPv4 Server	DHCPv6/PD	DHCPv6/P	D Server
*	Overall Settings		F	Port Name	Name	_	Protocol State	RIP Version	Update Type	DUT IPv4
吊	Interfaces		► P	Port_1	RipProtocolC		Closed	RIPv2	Multicast	224.0.0.9
-	Ports								-	
•	<ul> <li>Port_1 //70.1.1.</li> <li>Interfaces</li> <li>123Protoco</li> <li>L47Protoco</li> <li>Streams</li> <li>Captures</li> </ul>	200/2/1 Is Is								

步骤 4-2: 添加 RIP routes

添加 10 条 RIP Routes

XID	늘 🚽 • 🛞 • 🕑 🤡	∓		Tool					
File	Home View	Tool	Cor	nfiguration					
Apply	Start Stop Delete All All Action	Add Edit RIP	Start RIP	Stop RIP RI	Adverti Withdr Suspen P	ise RIP 💽 Re aw RIP 💽 Vi id RIP	esume RIP ew RIP Route		
Test Co	nfiguration								
1	Overview	L2.3Pro	otocols	DHCPv4	Di	HCPv4 Server	DHCPv6/PD	DHCPv6	5/PD S
*	Overall Settings	Port	Port Name			Protocol Sta	te RIP Version	Update Ty	pe D
R.	Interfaces Ports	Port	_1	RipProtoc	olCo	Closed	RIPv2	Multicast	22
	<ul> <li>Port_1 //70.1.1.200/2</li> <li>Interfaces</li> <li>L23Protocols</li> </ul>	Edit Route	IPvo n	outer					
	L47Protocols	RIP Session	Name	Name	Numb	er of Routes	Start IPv4 Prefix	End IPv4	Prefix
•	<ul> <li>Streams</li> <li>Captures</li> <li>Port_2 //70.1.1.200/2</li> <li>Captures</li> </ul>	RipProtocol	Confi	Riplpv4	10		50.1.1.0	50.1.10.0	





Endp	oints	Endpoints	
Gene	ral	Source Port	Destination Port
Packe	et/Edit	111001212	//70.1.1.200/2/2
Previ	ew		

#### 步骤 5-2: 配置流量

配置流量

- ·流量名称
- ·报文长度,填充内容等

X	NERTEL					RIP 协议	ノ测试
X St	ream Editor - //70.1.1.200,	/2/2 : RIP					×
=	Endpoints	General					
≡	General	Traffic Name	RIP	Enable Signature			
Ξ	Packet/Edit						
=	Preview	Frame Length Type	Fixed 🔹	Fixed Length(bytes)	128		
		Payload Type	Cycle 🔹	Payload Value(hex)	0		
		Max Length(bytes)	256	Min Length(bytes)	128		
					ОК	Cance	

### 步骤 5-3: 配置报文格式 1

目的 MAC

·修改为 DUT G1/0/2 的 MAC

源 IP

·修改为测试仪 P2 的 IP

配置 Frame

- · 配置 Frame 长度
- · 配置 Frame 填充内容

Endpoints		e 📀	<b>∂</b>		°°		Hex '	Viev	V N	lone	6		-				
General		Name								Val	lue						
General		⊿ ≫> Fr	am	е													
Dackat/Edit		4 >>	Ett	nerne	tII H	eade	er							-			
Packet/ con			>	Desti	natio	on M	AC A	٩dd	ress	00:	0E:84	4:B0	:84:4	12			
			>	Sour	e M	AC A	ddre	ess		00:	00:00	0:12	:30:1	0			
Preview			>	Proto	col 1	Гуре	(he)	()		<a< td=""><td>UTO</td><td>&gt; IP</td><td>v4</td><td></td><td></td><td></td><td></td></a<>	UTO	> IP	v4				
		a >>	IP\	4 He	ader												
			>	Versi	on (i	nt)				<a< td=""><td>UTO</td><td>&gt; 4</td><td></td><td></td><td></td><td></td><td></td></a<>	UTO	> 4					
			>	Head	ler Le	engt	h (in	t)		<a< td=""><td>UTO</td><td>&gt; 5</td><td></td><td></td><td></td><td></td><td></td></a<>	UTO	> 5					
			>	TOS	(hex)					00							
		> Total Length (int)						<auto> 20</auto>									
					Identification (int)				123								
		Flags (bits)						010									
		<ul> <li>Fragment Offset (int)</li> </ul>					0										
			>	TTL (	int)					128 <auto> Experimental <auto> 0000</auto></auto>							
			>	Proto	col (	(int)											
			>	Chec	ksum	he (he	x)										
			>	Sour	e Ad	ddre	SS			20.	1.1.2	8					
			>	Desti	natio	on A	ddre	SS		[Ind	c, 50	.1.1.	0, 0.	0.0.1	, 10]		
		- C	>	Head	ler O	ptio	n										
			>	IPv4	Padd	ling	(hex)	)		<a< td=""><td>UTO</td><td>&gt;</td><td></td><td></td><td></td><td></td><td></td></a<>	UTO	>					
	He	e Editor –															
			0	0 01	02	03	04	05	06	07	08	09	0a	0b	00	0d	0e
	000	000000	0	0 0e	84	b0	84	42	00	00	00	12	30	10	08	00	45
	000	000010	0	0 14	00	7b	40	00	80	fd	00	00	14	01	01	02	32
	000	000020	0	1 00													

## 步骤 5-4: 配置报文格式 2

目的地址配置递增 对应发布的 10 条 Routes

-	Identification (int)	123		
>	Flags (bits)	010		
>	Fragment Offset (int)	0		
>	TTL (int)	128		
>	Protocol (int)	<auto> Experimenta</auto>	al	
>	Checksum (hex)	<auto> 0000</auto>		
>	Source Address	20.1.1.2		
>	Destination Address	[Inc, 50.1.1.0, 0.0.0.1, 1	0] 🖌	
>	Header Option			
>	IPv4 Padding (hex)	○ Single Value	Start 50.1.1.0	
		Increment	Count 10	
		O Decrement	Step 0.0.0.1	
		Olict		0000000
Editor				
CEUILOI	00 01 02 02 04 05 0	Random		
00000				
000010	00 14 00 7b 40 00 8	Stream Type IntraM	odifier	
000020	01 00	Sueam type Intram	oumer	

## 步骤 5-5: 预览报文

目的 IP 地址递增会显示出来

= Endpoints	St	ream	Count 1	Flow Cou	Int 10	GoTo
General	D	rag a	column header	here to grou	ip by that column	
Packet/Edit		ID	Stream No.	Flow No.	IPv4.Destination Address	
		1	1	1	50.1.1.0	
Preview		2	1	2	50.1.1.1	
		3	1	3	50.1.1.2	
		4	1	4	50.1.1.3	
		5	1	5	50.1.1.4	
		6	1	6	50.1.1.5	
		7	1	7	50.1.1.6	
		8	1	8	50.1.1.7	
		9	1	9	50.1.1.8	
		10	1	10	50.1.1.9	

	Tool				
	Tool				
	Conniguration				127
Edit Stream	S To Pause Si	tream	>_	Start L2 Lear	rning
Add Star	t Stop	Stream	Deep File	Start L2 KX L	earning
tream • Strea	m • Stream • 🞦 General Stream Command	e streams Fro is	m rcap rite	Stop L2 Lear	ming
ast Configuration					
	Stream Template				
Overview	Port Name Name	Enable	Generated From	Source	Destinat
Overall Settings	Port 2 RID		RawStream	source	doct
Therfaces		(E)	nuwstreum	Source	uest
Ports		-			
Port_1 //70.1.1.200/2/1					
Port_2 //70.1.1.200/2/2					
Tinterfaces					
L23Protocols					
L47Protocols					
Streams					
Captures					
元 Captures 启用 RIP 骤 6-1: 启动 RIP					
<b>九</b> Captures 启用 RIP <b>骤 6-1: 启动 RIP</b> 法 1: 启动 RIP 选中 点击 Start RIPv2	Tool				
	Tool Tool			1	_
启用 RIP <b>際 6-1: 启动 RIP</b> 法 1: 启动 RIP 选中 気击 Start RIPv2 □ ≧ 및 ▼ ⓒ ▼ ⑨   マ  ▼ File Home View	Tool Configuration	Advertise RIF	P 🛌 Resume RIF	2	-
京 启用 RIP 骤 6-1: 启动 RIP 法 1: 启动 RIP 选中 点击 Start RIPv2 〇 〇 〇 〇 〇 〇 〇 〇 File Home View の り Start Stop Delete Add	Tool Tool Edit Start Sop	Advertise RII	P 🛌 Resume RIF P 🛌 View RIP Ro	o oute	_
Captures 启用 RIP 骤 6-1: 启动 RIP 法 1: 启动 RIP 选中 法击 Start RIPv2 □ ▷ ▷ ○ ▼ ○ ○ ▼ File Home View New Start Stop Delete All	Tool Tool Edit RIP Edit Edit Edit RIP Edit RIP Edit RIP Edit RIP Edit RIP Edit RIP Edit RIP Edit RIP Edit Edit Edit Edit Edit Edit Edit Edit	Advertise RII Withdraw RII Suspend RIP	P 🛌 Resume RIF P 🏊 View RIP Re	o oute	-
A. Captures 京 启用 RIP 骤 6-1: 启动 RIP 法 1: 启动 RIP 选中 点击 Start RIPv2 □ ▷ □ ○ ○ ○ ○ □ = File Home View Oply Start Stop Delete All All All Delete Add RIP Action	Tool Tool Edit RIP Start Sop RIP RIP RIP RIP RIP RIP RIP RIP RIP	Advertise RII Withdraw RII Suspend RIP IP	P 🛌 Resume RIF P 🛌 View RIP Re	o oute	-
Captures 启用 RIP 骤 6-1: 启动 RIP 法 1: 启动 RIP 选中 法击 Start RIPv2 □ ➢ 및 • ⓒ • ⊙ ◇ I = File Home View Pile Home View Add RIP Action	Tool Tool Edit RIP RIP RIP RIP RIP RIP RIP RIP RIP RIP	Advertise RII Withdraw RII Suspend RIP IP	P 🛌 Resume RIF P 🛌 View RIP Re	pute	-
Captures 启用 RIP 骤 6-1: 启动 RIP 去 1: 启动 RIP 选中 去击 Start RIPv2 □ ▷ □ ○ ○ ○ ○ □ = File Home View ↓ ○ ○ ○ ○ □ = File Home View ↓ ○ ○ ○ □ = ↓ ○ ○ ○ ○ □ = ↓ ○ ○ ○ ○ ○ □ = ↓ ○ ○ ○ ○ ○ ○ □ = ↓ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ □ = ↓ ○ ○ ○ ○ □ = ↓ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○	Tool Tool Edit RIP Edit RIP Edit Configuration Edit RIP Edit RIP Edit RIP Edit RIP Edit RIP RIP RIP RIP RIP RIP RIP RIP RIP RIP	Advertise RIF Withdraw RI Suspend RIP IP	P E Resume RIF P View RIP Ro 4 Server DHCF	o bute Pv6/PD DI	
Captures 启用 RIP 骤 6-1: 启动 RIP 去 1: 启动 RIP 选中 去击 Start RIPv2 □ ➢ 및 ▼ ⓒ ▼ ⑨	Tool Tool Configuration Edit Start Sop RIP RIP SIP RIP RIP RIP R	Advertise RIF Withdraw RIF IP 4 DHCPv4 Prot	P E Resume RIF P E View RIP R 4 Server DHCF	ovute Dv6/PD DI ersion Upda	
C Captures 启用 RIP 骤 6-1: 启动 RIP 去 1: 启动 RIP 去中 去击 Start RIPv2 □ ● ■ • ● ● ● ● ● ■ File Home View ↓ ● ■ ● ● ● ● ● ● ● ■ File Home View ↓ ● ● ■ • ● ● ● ● ● ● ■ File Home View ↓ ● ● ■ • ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●	Tool Tool Edit RIP Edit RIP Edit RIP Edit RIP Edit RIP Edit RIP Edit RIP Edit RIP Edit RIP RIP RIP RIP RIP RIP RIP RIP RIP RIP	Advertise RIF Withdraw RI Suspend RIP IP 4 DHCPv4 colCo Clos	P E Resume RIF P View RIP R Server DHCF ocol State RIP V ed RIPv2	Pv6/PD DI ersion Upda	- 
Captures 启用 RIP 骤 6-1: 启动 RIP 去 1: 启动 RIP 选中 法击 Start RIPv2 □ ▷ ▷ I · ⓒ · ⊙ ◇ I · File Home View ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓	Tool Tool Configuration Edit RIP Start RIP Edit Start RIP Edit Start RIP Edit Start RIP Edit Edit Start RIP Edit RIP RIP RIP RIP RIP RIP RIP RIP RIP RIP	Advertise RIF Withdraw RIF Suspend RIP IP 4 DHCPv4 prot colCo Clos	P E Resume RIF P E View RIP Ro 4 Server DHCF ocol State RIP V ed RIPv2	2v6/PD DI ersion Upda	
C Captures 启用 RIP 骤 6-1: 启动 RIP 去 1: 启动 RIP 选中 去击 Start RIPv2 □ ▷ □ · ⓒ · ⑨ ◇ I = Home View ↓ ○ ○ ○ ○ ■ Ply Start Stop Delete All All Action Coverview ◇ Overall Settings R Interfaces ● Port_1 //70.1.1.200/2/1	Tool Tool Edit RIP Edit RIP Edit RIP Edit RIP Edit RIP Edit RIP Edit RIP Edit RIP Edit RIP Edit RIP Edit RIP Edit RIP RIP RIP RIP RIP RIP RIP RIP RIP RIP	Advertise RIF Withdraw RIF Suspend RIP IP 4 DHCPv4 Prot colCo Clos	P Resume RIF P View RIP Re 4 Server DHCF ocol State RIP V ed RIP V2	Pv6/PD DI ersion Upda	
C Captures 启用 RIP 骤 6-1: 启动 RIP 去 1: 启动 RIP 选中 去击 Start RIPv2 → → → → → → → → → → → → → → → → → → →	Tool Tool Edit RIP Edit Start RIP Edit Start RIP Edit Start RIP Edit Start RIP Edit Start RIP Edit RIP Edit Start RIP RIP RIP Edit RIP RIP RIP RIP RIP RIP RIP RIP RIP RIP	Advertise RIF Withdraw RIF Suspend RIP IP 4 DHCPv4 DHCPv4 colCo Clos	P Resume RIF P N View RIP Ro 4 Server DHCF ocol State RIP V ed RIPv2	2v6/PD DI ersion Upda	- - -

方法 2

·右键选中



L23Protocols DHCPv4 DHCPv4 Server DHCPv6/PD DHCPv6/PD Server Port Name Name Protocol State RIP Version Update Type DUT IP DID Port\_1 224.0.0 Multicast Сору Copy Cell Value Cut Ж × Delete 🕤 Duplicate Paste B **RIP** Commands Start RIP × Stop RIP Advertise RIP Withdraw RIP Suspend RIP **Resume RIP** View RIP Route

#### 步骤 6-2: 查看 RIP 状态

查看状态

状态变为 Open 以后, 表明已经成功发布路由



#### **步骤 6-3: 查看 DUT 是否学习到 Routes** DUT 学习到 10 条 Routes



Switch#s	snow ip ro	bute rip				
50.	0.0.0/24	is subne	ettec	i, 10 subne	ets	
R	50.1.3.0	[120/1]	via	10.1.1.2,	00:00:06,	GigabitEthernet1/0/1
R	50.1.2.0	[120/1]	via	10.1.1.2,	00:00:06,	GigabitEthernet1/0/1
R	50.1.1.0	[120/1]	via	10.1.1.2,	00:00:06,	GigabitEthernet1/0/1
R	50.1.7.0	[120/1]	via	10.1.1.2,	00:00:06,	GigabitEthernet1/0/1
R	50.1.6.0	[120/1]	via	10.1.1.2,	00:00:06,	GigabitEthernet1/0/1
R	50.1.5.0	[120/1]	via	10.1.1.2,	00:00:06,	GigabitEthernet1/0/1
R	50.1.4.0	[120/1]	via	10.1.1.2,	00:00:06,	GigabitEthernet1/0/1
R	50.1.10.0	0 [120/1]	via	10.1.1.2,	00:00:06	, GigabitEthernet1/0/1
R	50.1.9.0	[120/1]	via	10.1.1.2,	00:00:06,	GigabitEthernet1/0/1
R	50.1.8.0	[120/1]	via	10.1.1.2,	00:00:06,	GigabitEthernet1/0/1
Switch#						

2.7 发流验证

**步骤 7-1: 切换 Load 模式** 切换模式 默认基于端口 切换到基于 Stream

Add Stream	Edit Stream Edit Load Profile Start Stream	• s	Stop tream	Pause Resum Genera	Stream ie Stream ate Strean	ns From Pcap Fi	Start L2 Learn Start L2 Rx Le Stop L2 Learn	ing arning ing				
Test Co	onfiguration Overview	St	Stream C	ate	nds							
\$	Overall Set <mark>i</mark> ngs		Generated Fr	om	Source		Destination	Stream State	Enable	e Signature	Resolve De	estination N
-	Ports		BindingStream	11	Interface_	1(20.1.1.2/24)	Ospfv2SummaryRo	Ready				$\checkmark$
	Port_1 //70.1.1.200/2/1	+	BindingStream	n	Interface_	1(20.1.1.2/24)	Ospfv2AsExternalR	Ready				
	🕂 Inte faces 💥 L231 rotocols 🕄 L47 <mark>1</mark> rotocols	1	C Edit Load	Profile	e mit Mo	Error Generat	i Load Profile Ty	Inter Frame Ga	Profi	Stream Lo	and Profi	<u>2007</u> ()
	😂 Streams		Port 1	Contin		No Error	Rase On Port	Inter Frame Cap	Drofilo	Stream LC	ad FIOII	
		Ø.	Port_2	Contin	nuous	No Error	Base On Stream	InterraineGapi	PIOIIIe	Edit Strea	m Ba 🔻	
	<ul> <li>Port_2 //T0.1.1.200/2/2</li> <li>Interfaces</li> <li>L23Protocols</li> <li>L47Protocols</li> <li>Streams</li> <li>Captures</li> </ul>									Name Unit Name Enable Tag	Value Percent (%) StreamLoadPr	ofile_2

**步骤 7-2: 修改 Load 值** 修改 load 值 修改为 10%

XIN	IERTE	L										RIP 协议测	则试
XI 🗅 🛯	🗎 🖌 💽 🕶 Home	⊛ 📀 I <del>▼</del> View	Тоо	I Cor	<b>Tool</b> nfiguratio	n							Rer
Add Stream •	Edit Stream	n Profile Str	tart eam • S	Stop tream •	Pause S Resume Generat	tream Stream te Streams ds	From	Pcap File	2 2	Start L2 L Start L2 F Stop L2 L	.earni Rx Lea .earni	ng arning ng	
Test Con	figuration												
1	Overview		St	ream Templ	ate	12.00							
( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( )	Overall Settin is nterfaces	5	•	Port Name Port_2	RIP	Enable	e G R	ienerated <i>awStrean</i>	l From	source	d	Destination lest	Stream Ready
🗏 🚍 F	Ports			K Edit Load	l Profile		~					i i i	
•	Port_1 // <sup>7</sup> 0.	1.1.200/2/1		l oad Profile									
	Port_2 //10.	1.1.200/2/2		Port Name	e Transr	nit Mode	Load	Profile T	vpe	Port Lond	Unit	Port Load	Rate
	Therface	es		Port 1	Contin	uous	Base	On Port	, pc	Percent (%	6)	100.0	nate
	L2SProte		I	Port_2	Contin	uous	Base	On Port	F	Percent (%	6)	10.0	
选中流: 点击 sta XIC File	量 art Den J 、 ④ Home S Edit Str S Edit Lo:	Vie vie ad Profile	,  ∓ w	Tool	Con	Tool figuratio Pause S	n tream	m			2	Start L2 Le Start L2 Rx	arning
Add		aarronic	Star	t Stop		Generat	te Stre	ams Fro	m Pca	ap File	D-	Stop L2 Le	arning
Stream			Stream	n · puear	Stream (	Comman	ds						
Test Co	nfiguration												
-	Overview			Stream	Templa	ate							
*	Overall Setti	nas		Port	Name	Name	En	able	Gen	erated F	rom	Source	Dest
Ĩ	Interfaces	ngs		Port	2	RIP		~	Raw	Stream		source	dest
	Ports		1										
	<ul> <li>Port_1 //</li> <li>Port_2 //</li> <li>Port_2 //</li> <li>Interior</li> <li>L23P</li> <li>L47P</li> <li>Stread</li> <li>Capture</li> </ul>	r70.1.1.200/ r70.1.1.200/ faces rotocols rotocols ms ures	2/1 12/2										



### 步骤 7-4: 切换到 Stream Block 统计

切换统计

- ·默认基于端口统计
- · 切换到基于 stream Block 统计

5	lically Fort 2		Selei				1			
	PortHan	Tx Stream Fran		Default •	Access	Þ.	Тх	Frame Ra	Rx Frame Ra	Tx Byte Ra
۲	Port_1 0 Port_2 10464487	0		Recent result views	Carrier Ethernet	F	0		844594	0
	Port_2 10464487	1	Stream/Port Stream Statistic	L47	F.	844	4595	0	104729780	
				Clear History	Routing	F				
					Stream	Þ		Port Strea	m Statistic	
					Switch	Þ		Stream Blo	ock Rx Statistic	
								Stream Blo	ock Statistic	
								Stream Blo	ock Tx Statistic	
								Stream Rx	Statistic	
								Stream Sta	atistic	
								Stream Tx	Statistic	

#### 步骤 7-5: 查看统计

- 查看统计
- ・速率
- ·时延
- · 丢包
- · ....

Re	sult 1						
St	ream/Stream B	lock Statistic	Select Result Vie	w- 🗘 📙 🍕			
	Stream Block	Tx Port Name	Rx Port Name	Tx Stream Frames	Rx Stream Frames	Tx Frame Rate	Rx Frame Rate
×	RIP	Port_2	Port_1	2918288	2936439	84460	84459

Tx Byte Rate	Rx Byte Rate	Rx Sequence Erro	Rx Payload Error	Min Store Forward La	atency (us)	Average	ge <mark>Store Forwa</mark> r	d Latency (us)	Max Store Forward Latency	
10472916	10472916	0	0	5.512		5.901			6.504	
								È		
Average C	ut Throug	h Latency (us)	Max Cut Throu	ugh Latency (us)	Tx Bit R	late F	Rx Bit Rate	Rx Utilizat	tion (%)	

Min Store Forward Jitter (us)	Average Store Forward Jitter $\ ^{\heartsuit}$	Max Store Forward Jitter (us)	Min Cut Through Jitter (us)	Avera
0	0.019	0.112	0	0.019

确保没有丢包

## 

Tx MBit Rate	Rx MBit Rate	Realtime Lost Fran	nes	Rx L1 Rate (bps)	Tx L1 Rate (bps)	
83.783328	83.78432	0		100000640	99999456	

## 三层交换机的配置

以上就是使用 BigTao-V 网络测试仪进行 RIP 协议测试实操。